

IN THE CLAIMS

1. A process for the formation of [an enhanced] a dispersed active metal (DAM) catalyst for conducting hydrogenation reactions comprising:

a) forming a slurry of particulate DAM catalyst characterized by the capacity to form more than one oxide of the DAM in a suitable [fluid] liquid;

b) contacting the particulate DAM catalyst in the slurry with an oxidizing agent at temperatures below 200°C [for a time such that the metals no longer exhibit uncontrollable pyrophoricity, thereby] to form[ing] an oxidized catalyst precursor comprising said metals and at least one of hydroxides thereof and oxides thereof, wherein at least a portion of said hydroxides and oxides are in the lower oxidation state of the metals;

c) adding to said oxidized catalyst precursor a solution in a suitable solvent of one or more reducible salts of promoter metals selected from the group of rhenium, ruthenium, palladium, iron and cobalt;

d) recovering and drying said oxidized catalyst precursor and said salt; and

e) forming an active catalyst by treating the oxidized catalyst precursor with hydrogen at elevated temperature, wherein said one or more salts will be reduced during the hydrogen treatment to form the metal.

8. A process in accordance with Claim 1, wherein in step d) [the mixture of] said oxidized catalyst precursor and said one or more salts is dried in air at a temperature above 100°C for at least one hour.

9. A process in accordance with Claim 1, wherein in step d) [the mixture of] said oxidized catalyst precursor and said one or more salts is dried under an inert atmosphere.

13. A process in accordance with Claim 1, wherein step e) is heating [said mixture] in [air] hydrogen to a temperature of about 400° for a time sufficient to form the promoter metal from said one or more reducible salts thereof.

14. A[n enhanced] catalyst formed by the process of Claim 1.

15. A[n enhanced]catalyst in accordance with Claim 14, wherein said promoter metal is rhenium.

16. A[n enhanced] catalyst in accordance with Claim 14, wherein said promoter metal is ruthenium.

17. A[n enhanced] catalyst in accordance with Claim 14, wherein said promoter metal is cobalt.